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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,141	10/13/2000	Boaz Arnon	PM 20598 38120	1036

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PILLSBURY WINTHROP, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER
TRAN, TAM D

ART UNIT	PAPER NUMBER
2674	8

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/687,141	Applicant(s) ARNON, BOAZ
	Examiner Tam D. Tran	Art Unit 2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3,4,7* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1, 6-14, 17, 18, 20, 27-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Korth (USPN 5767842).

2. In regard to claim 1, Korth teaches an input device (data input device) optically generated image of a data input device, the image comprising keyboard (at least one input zone actuable by an action performed thereon by a user); a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to the action; and a processing system (processor) in communication with the sensor operative to process the signals for performing an operation associated with the at least one input zone, see Fig.1-3, col. 9 –col.10.

3. In regard to claim 6, 7, Korth teaches input device wherein input device comprises a key of a keyboard, see Fig.1-3, col. 9 –col.10.

4. In regard to claim 8, Korth teaches input device, wherein the input device represents a mouse, see the abstract.

5. In regard to claim 9, Korth teaches input device, wherein the input device represents a calculator panel (touch pad), see col.3 lines 5-7.

6. In regard to claim 10, Korth teaches input device, wherein the sensor comprises a video (optical) sensor, see col.2 lines 7-15.

7. In regard to claim 11, Korth teaches input device, wherein the optical sensor comprises CCD array, see col.2 lines 7-15.

8. In regard to claim 12, Korth teaches input device, wherein the optical sensor comprises TV sensor and TV camera (position sensing device), see col.2 lines 1-37.

9. In regard to claim 13, Korth teaches input device, wherein the sensor provides acoustic feedback, col.7 lines 13-17.

10. In regard to claim 14, Korth teaches input device, wherein the sensor comprises TV sensor and TV camera (movement sensor), see col.2 lines 1-37.

11. In regard to claim 17, Korth teach a method for data input comprising: virtual keyboard optically produce on the surface (generating an optical image of a data input device), the image comprising keys (at least one input zone actuable by an action performed thereon by a user); performing touching the key with fingers (an action on the at least one input zone); optically detecting with video sensor each touch key on the keyboard (sensing the action performed on the at least one input zone); entering identification information of the keys touch with fingers into data processing system to represent the input data (generating signals in response to the action; and processing the signals for performing an operation associated with the at least one input zone), see col.10 lines 5 - 42.

12. In regard to claim 18, 29- 31 Korth teaches method for data input, wherein the step of optically producing virtual keyboard on the surface (generating the optical image comprises generating an image of a keyboard) and the step of touching the key with fingers (performing an action comprises pressing keys of said image of said keyboard), and code bar is an inherent input device of keyboard, see col.10 lines 5 - 42.

13. In regard to claim 20, Korth teaches method for data input, having multi-task capability (modify a configuration of keys), see col.2 line 62- col.3 line 20.

14. In regard to claim 27, 28, 32, Korth teaches method for data input, wherein the step of sensing comprises: optically producing virtual keyboard on the surface (providing a light beam emanating from a light source); detecting light reflected from a contour of the detected hand (object within a silhouette of the image); and analyzing a reflection of the light to determine a spatial position of the finger of the operator's hand (object), see col. 10 lines 5-43.

15. In regard to claim 33-35, Korth teaches method for detecting light reflects from contour (sihouette) to determine positions of fingers and hand properly. See figure 2.

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-5 are rejected under 35 U. S.C. 103(a) as being unpatentable over Korth (USPN 5767842) in view of Baba et al. (USPN 5457550), hereinafter Baba.

17. In regard to claim 2, Korth teaches an input device (data input device), Baba teaches holographic scanner 39 comprising laser sources (a light source) which generate a light beam, and motor 48 and hologram disk 44 (beam-moving apparatus) which moves the light beam to generate reflected light, see Fig 10, 11, col.8 lines 1-25. It would have been obvious to a person

of ordinary skill in the art at the time of the invention to incorporate the light system of Baba into the input device of Korth because the combination system of Baba and Korth would allow the input device transmitting and receiving light to and from a surface.

18. In regard to claim 3, Baba teaches motor 48 and hologram disk 44 (beam-moving apparatus) comprises a hologram disk (mirror) arranged to reflect the light beam, see Fig 10, 11, col.8 lines 1-25.

19. In regard to claim 4, Baba teaches a motor 48 (an actuator) operatively connected to the hologram disk 44 (mirror), wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device, see Fig 10, 11, col.8 lines 1-25.

20. In regard to claim 5, Baba teaches motor 48 and hologram disk 44 (a beam-moving apparatus) comprises hologram disk 44 (a scanner) arranged to scan said light beam, and motor (an actuator) operatively connected to the hologram disk (scanner), wherein the motor (actuator) moves the hologram disk (scanner) to scan the light beam to form at least a two-dimensional image of said data input device, see Fig 10, 11, col.8 lines 1-25.

21. **Claims 15 and 16, 19** are rejected under 35 U. S.C. 103(a) as being unpatentable over Korth (USPN 5767842) in view of Carau Frank P. Sr. (EP 0982676 A1), hereinafter simply Carau.

22. In regard to claim 15 and 16, Korth teaches input device. Carau teaches a PDA (processor, computer) process data and projecting virtual display 104 (output device) and virtual keyboard 108 onto a flat surface, see Fig.1 col.2 lines 5- 17. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the virtual keyboard

process of Carau with the input data process of Korth because the combination process of Carau and Korth would allow users having a portable multi-task input device.

23. In regard to claim 19, Carau teaches method for data input, wherein PDA processed touch key signal from the virtual keyboard (wherein the keyboard will have alphanumeric characters), see Fig.1 col.2 lines 5- 17.

24. **Claim 21** is rejected under 35 U. S.C. 103(a) as being unpatentable over Korth (USPN 5767842).

25. In regard to claim 21, Korth teaches method for data input, Korth doesn't teach the method of selecting first language and second language; however, It is well known in the art of display system to select operating languages from the keyboard system. Method of selecting multi-languages (first and second language) allow user entering difference languages from the physical keyboard system (Official Notice). It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the multi-language feature of the physical keyboard into the method of Korth because it is well known in art that the method of selecting multi-languages would add a feature onto the device of Korth.

26. **Claim 22-26** are rejected under 35 U. S.C. 103(a) as being unpatentable over Korth (USPN 5767842) in view of McPheters (USPN 6377238 B1).

27. In regard to claim 22, Korth teaches method for data input, McPheters teaches the input interface includes a holographic image of an input device, see col.2 lines 15-35. It would have been obvious to a person of ordinary skill in the art at the time of the invention to incorporate the method of McPheters into the input method of Korth because the combination method of

McPheters and Korth would incorporate three-dimensional holographic image of a keyboard from a hologram of the input device.

28. In regard to claim 23, McPheters teaches the input interface includes a holographic image of a physical input device, wherein hologram is white light (monochromatic laser), see col.8 lines 20-23.

29. In regard to claim 24, McPheters teaches the input interface includes a holographic image of a physical input device, wherein hologram is white light (monochromatic laser), see col.8 lines 20-23. It is inherent that hologram images (white light) constructing with different colors and wavelengths by lens and prism.

30. In regard to claim 25, McPheters teaches the input interface includes a holographic image of a physical input device, wherein hologram is white light (monochromatic laser), see col.8 lines 20-23. It is inherent that colors are generated by splitting the white light spectrum using prism (color and wavelength splitter).

31. In regard to claim 26, McPheters teaches the input interface includes a holographic image of a physical input device, wherein hologram is white light (monochromatic laser), see col.8 lines 20-23. It is inherent that polarizers can control light intensity, which generates differently polarized lights.

Conclusion

32. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tam D. Tran** whose telephone number is **703-305-4196**. The examiner can normally be reached on MON-FRI from 8:30 – 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Matthew Bella** can be reached on **703-308-6829**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered response should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Tam Tran

Examiner

Art unit 2674

Matthew C. Bella
Primary Examiner